Abstract

[0054] The invention is directed to a beam-shaping unit (4) for generating a beam bundle which is focused in a punctiform manner, propagates in a ring shape, and has a radiationless central area, comprising a focusing lens (2), a first axicon (1) and a second axicon (3), and to an arrangement with a beam-shaping unit (4) of this kind for introducing radiation energy into a workpiece (14) comprising weakly absorbent material which is arranged between a first resonator mirror (13) and a second resonator mirror (19). The first resonator mirror (13) which is arranged in front of the workpiece (14) in the radiating direction is located in the radiationless central area. The radiation energy can be absorbed to the maximum extent by repeatedly passing through the same interaction volume in the workpiece (14).